DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-012978
Date Inspected: 12-Apr-2010

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 1000
OSM Departure Time: 1830
Location: Clackamas, OR

CWI Name:	M. Gregson, J. Salazar, G. Mundt			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

Hinge-K Pipe Beam Assembly 120A-2:
The QA Inspector witnessed WID #F17 (Igor Frolov), in-process of performing electro slag welding (ESW), on an additional overlay welding pass, utilizing Soudotape 316L stainless steel consumable strip. The QA Inspector noted that WID #F17 was currently qualified for this and was performing the ESW in the flat position. WID #F17 explained to the QA Inspector that this was the last ESW pass and he will then perform the Flux Core Arc Welding (FCAW) repairs, on the completed overlay.
The QA Inspector noted that Lead QC Inspector Jose' Salazar was present to witness the ESW. QC Inspector Salazar explained that he had previously recorded in-process welding parameters of 1200 amps and 26 volts, with a minimum pre-heat temperature of 150 degrees Fahrenheit. QC Inspector Salazar explained that he had previously recorded a travel speed of 10.5 inches per minute (i.p.m.) and that Welding Procedure Specification (WPS) 7003 was being utilized. The QA Inspector randomly verified a pre-heat temperature of approximately 150 degrees Fahrenheit and verified welding parameters to be in compliance with AWS D1.5 and the applicable WPS 7003. See attached picture below.

Hinge-K Pipe Beam Assembly 101A-2:
The QA Inspector witnessed WID #B62 (Marcus Belgarde), performing Flux Core Arc Welding (FCAW) on the

Weld Joint #WM4-1, in the vertical (3G) position. The QA Inspector noted that this weld joint was the Complete Joint Penetration (CJP) AWS D1.5 B-U7-S, Fuse 120A-5 to Forging 102A-2. The QA Inspector noted that OIW QC Inspector Jose Salazar was present and QC Inspector Salazar explained that WID #B62 was currently tack welding the CJP joint and that he had previously recorded in-process welding parameters of 24 volts and 250 amps, with a pre-heat temperature of 350 degrees Fahrenheit. QC Inspector Salazar explained that the FCAW tacking was being performed in accordance to Welding Procedure Specification (WPS) 3048. The QA Inspector randomly verified pre-heat temperature of 350 degrees Fahrenheit and the welding parameters to be in compliance with the applicable WPS. The QA Inspector noted that the FCAW, appeared to be in compliance with AWS D1.5 and the applicable WPS 3048. See attached picture below. The QA Inspector was later informed by QC Inspector Salazar, that the FCAW tacks were complete and that OIW Production lead Troy Smith and WID #B62, had placed a fabricated carbon steel flat plate assembly inside of the Fuse, in preparation for the SAW.

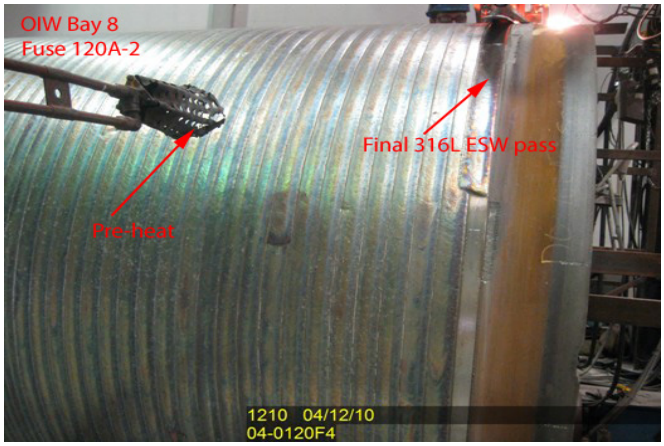
The QA Inspector then witnessed Production Lead Smith and WID #B62 attaching 2 carbon steel water boxes and assembling inlet and outlet water hoses, to the boxes. The QA Inspector noted that the carbon steel flat plate assembly and 2 water boxes were previously used on Assembly 101A-1, for OIW to perform the SAW in a comfortable position and to mildly cool/protect the Stainless Steel overlay, nearby the CJP Weld Joint, prior to performing the SAW.

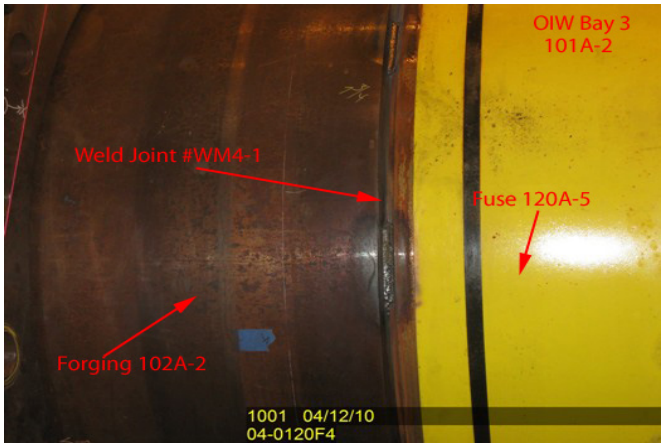
The QA Inspector was present on this swing shift and spoke with QC Inspector Gary Mundt. QC Inspector Mundt explained that WID #V7 (Vincent Vue) is continuing to attach the water hoses on the water boxes and will then begin setting up the SAW machine. At this time, the QA Inspector noted that no welding was performed on Swing Shift.

Material, Equipment, and Labor Tracking (MELT)

QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 4 OIW production personnel and 1 QC Inspector.

The QA Inspector noted that the following personell were present at AG Machine Works: 1 AG Machinist and 1 AG Supervisor.





Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer